

HOLLAND
ELECTRONICS LLC

Model ST5120 Hand - Held Field Strength Meter

USER'S MANUAL

Features:

- **Selects Channels 2 – 135 CATV
2 – 79 Off-Air**
Direct Frequencies 46-870 MHz using
Simple up/down arrow keys
- **Measures Visual, Aural, or V-A**
In dBmv or dBuv (selectable)
- **Wide Dynamic Range** (-35 to +60 dBmv)
- **AC Voltmeter**
- **8 Hour Rechargeable NiMH battery**
- **Adjustable Channel Volume**
- **Auto Power Shut-Off, Battery Status Indicator**

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Introduction

The **ST5120** hand-held Field Strength Meter uses RF signal processing techniques in combination with microprocessor technology to produce quick and accurate signal measurements. The meter provides the user a choice of reading individual channel video, audio, or a-a power level measurements. Automatic/semi-automatic internal calibration corrects for measurement variations due to frequency response, temperature change and internal attenuator setting. The combination of keypad tuning and menu driven display allow for simple operation.

The meter is programmed with both USA CATV and UHF/UHF NTSC standard formats. Users can also select frequencies for signal testing. The backlit LCD allows for viewing signal measurements even in dark places.

Specifications

Input Frequency Range	46-870 MHz
Channels 2 – 135 CATV	
Channels 2 – 78 Off – Air	
Frequency Stability	≤ 30 ppm
Resolution	50 KHz
Input Impedance	75Ω

Power Level Testing

Range	-35 - +60 dBmV
Accuracy	± 2.5 dBmV
Resolution	0.1 dBmV

AC Voltage Testing

Input Range	10 – 100 vac
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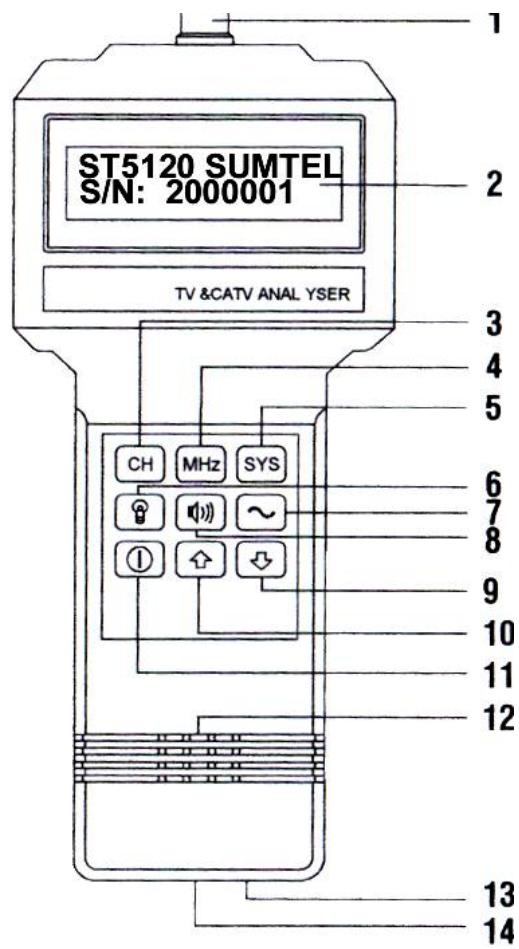
Channel Type

NTSC (6 MHz)

Input Connector	Replaceable High Return Loss F Type
LCD Controls	Contrast, Back Lighting
Screen Size	60 * 17 mm

Features

Audio	Adjustable Volume
Illumination	Back-Lit LCD
AC Input	110V / 60Hz
Battery use	8 Hours Minimum Charge
Size (mm)	210 * 93 * 50
Weight	0.5 Kg



Keypad Controls

See fig. 1.1 to locate the following keypad controls.

1.  – Power on/off button.
2. CH – Selects Video, Audio and V-A carrier measurement modes. Default is Video carrier mode. In any carrier mode the $\uparrow\downarrow$ buttons can be used for stepping to the desired channel.
3. MHz – Changes the Channel selective mode to Frequency mode. The $\uparrow\downarrow$ buttons can be used for stepping to the desired frequency.
4. SYS – used with the $\uparrow\downarrow$ keys to select either CATV or VHF/UHF inputs and either dBmV or dBuv measurement units.
5.  – Backlight on/off

Note: Using the backlight will discharge the battery more rapidly.
It is recommended that you select this function only when necessary.

6.  – Selects contrast of volume adjustment.
7.  – AC Power measurement mode.
8. $\uparrow\downarrow$ - Used to increment or decrement channel or frequency. Also to adjust volume level or LCD display contrast. Also used to select between CATV or VHF/UHF units, and dBmV or dBuv measurement units.

Other Physical Features

9. F-Type input connection.
10. Audio Speaker
11. DC power jack for power adapter.
12. Pilot LED to show meter charging.
13. LCD display

Powering the meter

The digital signal level meter can be powered by either an external AC voltage source or by the internal rechargeable NiMH batteries.

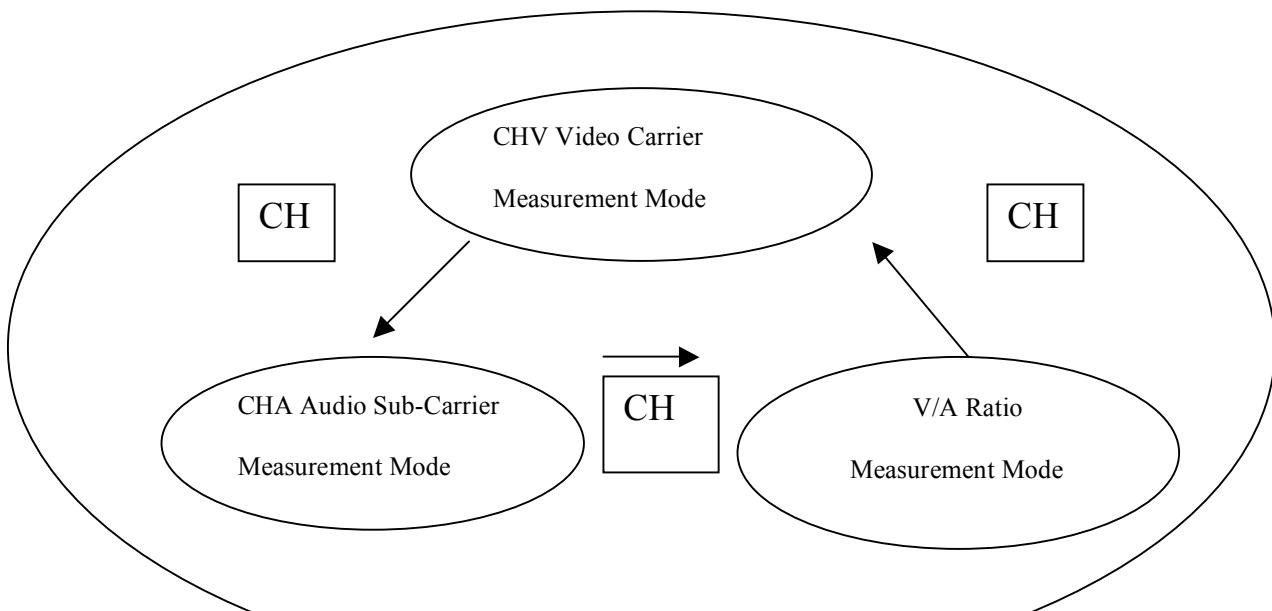
- A) Using an external AC source – make sure that the available AC line voltage is 120V, 60 Hz. Connect the DC output lead from of the adapter/ charger to the DC jack at the bottom of the ST5120 meter. Plug the adapter / charger into a 110vac source.
- B) Powering the meter with internal batteries: In order for the ST5120 meter to operate from the internal batteries, a sufficient charge must exist on the batteries. The recommended charging time for low charged batteries is 8 hours. Charging the batteries occurs when the charger is used to power the meter from an external AC source. The batteries charge whether the meter is switched on or off. The meter will alarm and flash the word “BAT” on the display to indicate low battery power. The meter will automatically shut down if idle for more than 5 minutes.

Signal Measurement

- 1) The RF signal input port is a type F male connector. Please use the G-F81 type adapter supplied by the meter.

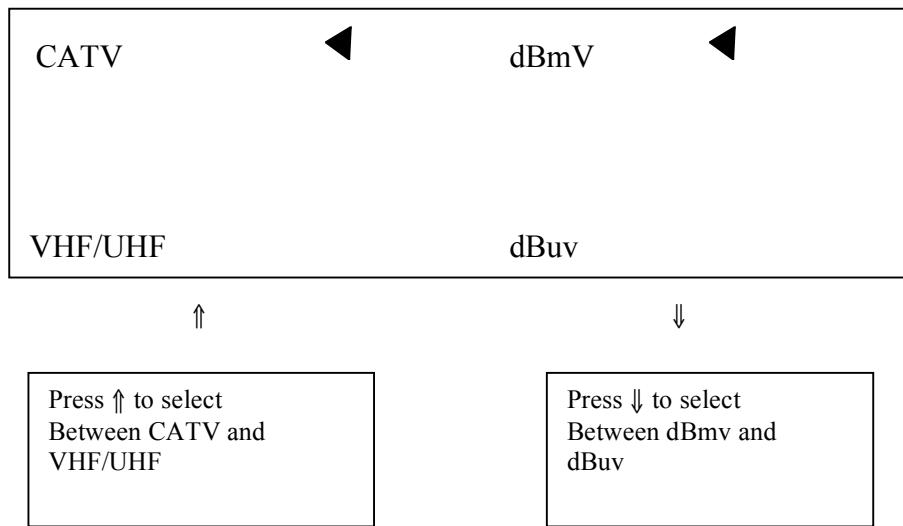
When connecting the G-F81 type adapter, first align the threads. Carefully screw in the adapter until seated. **Over tightening can seriously damage the input port.**

- 2) The **ST5120** hand-held TV/CATV Analyzer has TWO basic measurement modes, Channel power level measurement and **Frequency** power level measurement. Both modes can make measurements as follows:

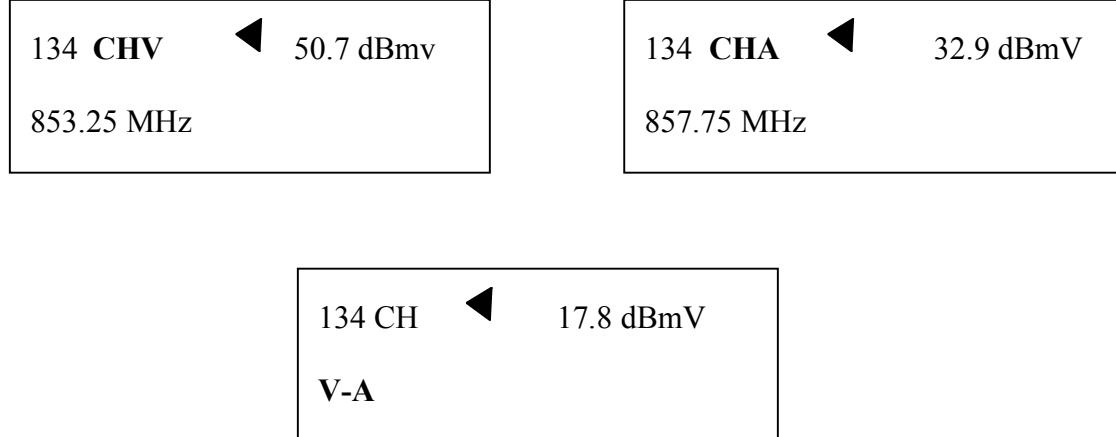


Operation

1. Press the **Q** button to turn on meter. The meter will start up with the model number and serial number, then automatically enter into the Video/Audio carrier measure mode.
2. **System Setting:** The **ST5120** offers the options of measuring either USA CATV or UHF/UHF channels. Press the **SYS** key to select the menu. Use the **↑** key to select either CATV or VHF/UHF mode. Use the **↓** key to select either dBmV or dBuv measurement units. Once set; press the **SYS** key again to exit and store the setting values as the default.



3. **Video, Audio and V-A differential measurement in Channel Mode:** Press the CH key to toggle between Video (CHV) , Audio (CHA), or V-A differential (V-A) modes.
Use the $\uparrow\downarrow$ keys to select the desired channel.



4. **Power Level Measurement in Frequency Mode:** Press the **MHz** key to enter the Frequency Power Level measurement mode. Select the desired frequency by using the $\uparrow\downarrow$ keys. (Note that the cursor will be moved to the right of “MHz”).

134 CH 50.7 dBmV
853-25 MHz

??? CH 50.4 dBmV
855.25 MHz

Fig. 4.1 a

Fig. 4.1 b

If the frequency selected is not on the Standard Channel Table, the display will show ??? as the **CH** number. (see fig. 4.1b)

To return to channel measurement mode, press the **SYS** key twice.

5. **Volume and LCD contrast level adjustments:** In the Channel or Frequency Power Level measurement modes, press the  button to choose between Volume or Contrast level adjustment. Adjust the Volume or Contrast levels using the $\uparrow\downarrow$ keys.

6. **AC voltage measurement:** Press the  key to enter the Voltage measurement mode. The input range is 10 – 100 vac. The meter will alarm if the input exceeds 100 vac. Exit this mode by pressing the  key again.

AC – VOLT
100.0 V

AC – VOLT
60.0 V

Care and Maintenance

1. Please keep the meter clean and dry. Don't place the meter in a harmful environment (dust, acid, alkali or moisture). Never clean the surface of the meter with organic solvent, acid or alkali solvent.
2. Avoid vibrating the meter. Never allow an external force to press against the LCD window, so as not to damage the display screen.
3. Do not drop the meter
4. Do not over tighten the G-F81 type connector at the input port.
5. When charging, use only the special charger supplied with the meter. Fully charge the batteries at least once every six months if not in use for an extended period.

HOLLAND ELECTRONICS LLC LIMITED WARRANTY

Holland Electronics LLC, warrants that the product enclosed with this Limited Warranty statement will conform to the manufacturer's specifications and be free of defects in the workmanship and material for a period of one-year (1) from the date of original purchase.

WARRANTY PROCEDURE:

If the product appears to be defective contact Holland Electronics LLC at (805) 339-9060. We will analyze the problem and offer solutions to prevent removing the unit from service. If no solution is found, and the unit must be returned for repair, you will be issued a Return Authorization (RA) number.

Holland Electronics LLC will, at its option, repair or replace the defective unit under warranty, without charge for parts or labor. This repair will be subject to charges if signs of tampering or misuse are detected. Incoming shipping costs will be the customer's responsibility. Returns will not be accepted without an RA number.

The warranty and remedy provided above are exclusive and in lieu of all other express warranties and unless stated herein, any statements or representations made by any other person or firm are void. The duration of any implied warranties of merchantability or fitness for a particular purpose on this product shall be limited to the duration of the warranty set forth above. Except as provided in this written warranty, Holland Electronics LLC shall not be liable for any loss, inconvenience, damage, including direct, special, incidental, or consequential damages, resulting from the use or inability to use this product, whether resulting from breach of warranty or any legal theory.

Some states do not allow limitations on how long an implied warranty lasts and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

The warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

To arrange for warranty service: Call Holland Electronics LLC (805) 339-9060

Return Address with appropriate Return Authorization Number:

**2935 Golf Course Drive
Ventura, CA 93003**